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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,666	08/01/2003	Yu-Fei Ma	MS1-1601US	3552

22801 7590 01/16/2007 LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201	**EXAMINER** WONG, ALLEN C
	ART UNIT 2621 / **PAPER NUMBER**

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/16/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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lhptoms@leehayes.com

	Application No.	Applicant(s)
Office Action Summary	10/632,666	MA ET AL.
	Examiner	Art Unit	
	Allen Wong	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-SB/08)
    Paper No(s)/Mail Date *8/1/03*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Claim Objections

1.   Claim 1 is objected to because of the following informalities: On lines 5 and 8,

the term "ER" is not defined in the claim. The term "ER" should be mentioned after the

term "redistribution" on line 3 of claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims 11-33 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 11 and 13-21 defines a "computer-readable medium comprising computer-program instructions...", and claim 12 and 22-33 defines a "computing device comprising a processor coupled to a memory, the memory comprising computer-program instructions..." embodying functional descriptive material. However, the claim 11 does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed "computer-readable medium comprising computer-program instructions...", and a "computing device comprising a processor coupled to a memory, the memory comprising computer-program instructions..." can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

The preamble of the claims should be rewritten as "a computer readable medium **encoded with** a computer program including **computer executable instructions** for representing sequential motion patterns..."

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.   Claims 1, 2, 4, 5, 7-15, 17-21, 30, 32 and 33 are rejected under 35 U.S.C. 102(b)

as being anticipated by Adiletta (6,101,276).

Regarding claims 1 and 30, Adiletta discloses a computing device and a method

for representing sequential motion patterns, the method comprising:

converting video frames into a sequence of energy redistribution measurements

(fig.6B, element 68; col.13, ln.9 to col.14, ln.9, Adiletta discloses the obtaining of

energy measurements of I, P and B frames from a group of pictures (GOP)); and

applying one or more motion filters to the ER measurements to generate a

number of temporal sequences of motion patterns, the motion patterns being in a

spatio-temporal data format, the number being a function of how many motion filters

were applied to the ER measurements (fig.7-8, Adiletta discloses the motion patterns

are captured where motion patterns or visual types are obtained, where the frames'

energy data, ie. DC and AC components of DCT, are filtered as texture, edge or

smoothness).

Note claims 2, 4, 5, 7-15, 17-21, 30, 32 and 33 have similar corresponding

elements.

Regarding claim 13, Adiletta discloses a computer-readable medium comprising

computer-program instructions for representing sequential motion patterns, the

computer-program instructions being executable by a processor, the computer-

program instructions comprising instructions for:

generating one or more motion filters according to respective ones of primary

motions in a video sequence, each of the motion filters being responsive to a particular

one dominant motion of the primary motions (fig.7-8, Adiletta discloses the motion

patterns are captured where motion patterns or visual types are obtained, where the

frames' energy data, ie. DC and AC components of DCT, are filtered as texture, edge

or smoothness);

calculating energy redistribution measurements between respective frames of the

video sequence, the respective frames being determined by a sliding window of video

frames of the video sequence (fig.6B, element 68; col.13, ln.9 to col.14, ln.9, Adiletta

discloses the obtaining of energy measurements of I, P and B frames from a group of

pictures (GOP));

converting the energy redistribution measurements into temporal sequences

showing distinct motion patterns, each temporal sequence being generated responsive

to application of a particular one of the motion filters to the energy redistribution

measurements (fig.6B, element 68 produces output of motion statistics where there are

distinct motion patterns in that fig.7-8, Adiletta discloses the motion patterns or visual

types are captured, where the frames' energy data, ie. DC and AC components of

DCT, are filtered as texture, edge or smoothness); and

wherein the temporal sequences represent high-level spatio-temporal motion

patterns of the video sequence (col.22, ln.49-62).

Note claims 14, 15 and 17-21 have similar corresponding elements.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 3, 6, 16, 22-29 and 31 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Adiletta (6,101,276) in view of Viscito (6,782,135).

Regarding claim 22, Adiletta discloses a computing device comprising a

processor coupled to a memory, the memory comprising computer-program

instructions executable by the processor for:

representing an energy distribution between a particular block in a first frame of

the frames and a different block in a second frame of the frames that is adjacent to the

first frame (fig.6B, element 68; col.13, ln.9 to col.14, ln.9, Adiletta discloses the

obtaining of energy measurements of I, P and B frames from a group of pictures

(GOP));

modifying content of the sliding window to include a new frame of the frames

(fig.3, note the use of the recursive rate control quantization scheme where the use of

a buffer to send a feedback to the quantization unit for cyclically updating the

quantization parameter to modify the frames data content);

responsive to modifying the content, updating, the represented energy

distributions for each block, the updating being based on an overlap portion of the

block and a previous block of a previous frame of the frames (fig.6B, element 68

produces output of motion statistics where there are distinct motion patterns in that

fig.7-8, Adiletta discloses the motion patterns or visual types are captured, where the

frames' energy data, ie. DC and AC components of DCT, are filtered as texture, edge

or smoothness); and

motion filtering the energy distributions to sequentially represent one or more

motion types presented by the video sequence over time, the one or more motion types

identifying one or more sequential motion patterns of the video sequence (fig.7-8,

Adiletta discloses the motion patterns are captured where motion patterns or visual

types are obtained, where the frames' energy data, ie. DC and AC components of DCT,

are filtered as texture, edge or smoothness).

Adiletta does not specifically disclose the term "motion vector fields" and deriving

motion vector fields. However, Viscito teaches the derivation of motion vector fields

(col.16, ln.3-17; Viscito discloses the use of motion vector field for temporal analysis).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the

teachings of Adiletta and Viscito, as a whole, for accurately, efficiently encoding image

data while maintaining high image quality so as to produce clear superb images on

display for viewing (Viscito col.2, ln.60-63).

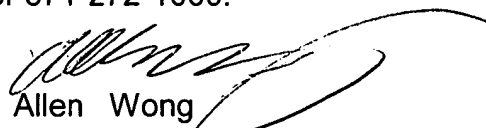Note claims 3, 6, 16, 23-29 and 31 have similar corresponding elements.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Groody can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Allen Wong
Primary Examiner
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AW
1/8/07